64TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { DOCUMENT No. 588.

HARBOR OF REFUGE AT PORTAGE LAKE, MICH.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

WITH A LETTER FROM THE CHIEF OF ENGINEERS, REPORT ON REEXAMINATION OF HARBOR OF REFUGE AT PORTAGE LAKE, MANISTEE COUNTY, MICH.

JANUARY 17, 1916.—Referred to the Committee on Rivers and Harbors and ordered to be printed, with illustration.

WAR DEPARTMENT,
Washington, January 15, 1916.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

SIR: I have the honor to transmit herewith a letter from the Chief of Engineers, United States Army, dated 14th instant, together with copy of a report from Maj. F. W. Altstaetter, Corps of Engineers, dated November 15, 1915, with map, on reexamination of harbor of refuge at Portage Lake, Mich., made by him in compliance with the provisions of the river and harbor act approved March 4, 1915.

Very respectfully,

LINDLEY M. GARRISON,
Secretary of War.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, January 14, 1916.

From: The Chief of Engineers, United States Army.
To: The Secretary of War.
Subject: Reexamination of harbor of refuge at Portage Lake, Mich.

1. Under authority contained in section 14 of the river and harbor act approved March 4, 1915, there is submitted herewith for transmission to Congress report dated November 15, 1915, with map, by Maj. F. W. Altstaetter, Corps of Engineers, relative to the project

for improvement of harbor of refuge at Portage Lake, Manistee County Mich.

2. The existing project for improvement of this locality was adopted in 1879, and as subsequently modified provides for the construction of a harbor of refuge, with an entrance channel from Lake Michigan 18 feet deep at low water and about 2,300 feet long, protected by parallel piers and revetments 362 feet apart at the entrance, narrowing to 356 feet inside. Except for dredging to full width and maintenance of full depth, the project has been completed. This harbor of refuge was constructed many years ago for the purpose of affording shelter for sailing vessels. Since that time sailing vessels have practically disappeared from the Great Lakes. Excellent commercial harbors have been developed within short distance at Ludington, Manistee, and Frankfort, and the district officer states that there is no longer any need for a harbor of refuge at Portage Lake. He therefore recommends that the project be abandoned, and this recommendation is concurred in by the division engineer, and the Board of Engineers for Rivers and Harbors.

3. After due consideration of the above-mentioned reports, I concur in the views of the district officer, the division engineer, and the Board of Engineers for Rivers and Harbors, and therefore recommend legislation authorizing the abandonment of the project for improvement of Portage Lake, Harbor of Refuge, Mich.

DAN C. KINGMAN,
Chief of Engineers, United States Army.

REPORT OF THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS.

[Third indorsement.]

BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
December 23, 1915.

To the CHIEF OF ENGINEERS UNITED STATES ARMY.

1. This report on harbor of refuge, Portage Lake, Manistee County, Mich., is submitted under authority of that portion of section 14 of the river and harbor act of March 4, 1915, which reads, "and the Chief of Engineers is directed to make a report upon any other projects, river or harbor, the further improvement of which under present conditions is undesirable, or in which modifications of the plans or projects should be made."

2. Portage Lake Harbor is located on the east shore of Lake Michigan, 8 miles north of Manistee Harbor and 19 miles south of Frankfort Harbor.

3. The existing project, adopted by the river and harbor act of 1879, as subsequently modified, provides for the construction of a harbor of refuge with an entrance from Lake Michigan 356 feet wide and 18 feet deep, protected by piers and revetments. Except for dredging to full width and maintenance of full depth, the project is complete. There has been expended on the harbor a total of $395,520.65.

4. The commerce of the harbor during the past 8 years has averaged 2,519 tons of freight and 6,775 passengers. The largest settlement on the lake has a population of about 325. There is no prospect of any substantial increase in commerce.

5. This harbor was constructed many years ago for the purpose of affording a refuge for the sailing vessels of that day. There was then no harbor near that would give adequate shelter. Since that time sailing vessels have practically disappeared, other harbors have been constructed close by which afford not only shelter but commercial ports, and the need of a harbor at Portage Lake no longer exists to an extent commensurate with the cost of its upkeep.

6. The board therefore concurs with the district officer and the division engineer, and recommends legislation authorizing the abandonment of the project.

For the board:

W. M. Black,
Colonel, Corps of Engineers,
Senior Member of the Board.

REEXAMINATION OF HARBOR OF REFUGE AT PORTAGE LAKE, MICH.

War Department,
United States Engineer Office,
Grand Rapids, Mich., November 15, 1915.

From: The District Engineer Officer.
To: The Chief of Engineers, United States Army
(Through the Division Engineer).
Subject: Report on abandonment of harbor of refuge at Portage Lake, Manistee County, Mich.

1. The following report on abandonment of harbor of refuge at Portage Lake, Manistee County, Mich., is submitted in compliance with department instructions in fourth indorsement of May 3, 1915, on report of the district engineer officer of March 12, 1915, upon the subject of abandonment or modification of river and harbor projects. The report refers to this harbor as follows:

Harbor of refuge at Portage Lake.—The Chief of Engineers in his annual report for 1912 recommends the entire abandonment of this project. The succeeding annual reports call attention to this recommendation. I am of the opinion that this harbor should be abandoned.

2. *Description of locality.*—Portage Lake Harbor is located on the east shore of Lake Michigan, 8 miles north of Manistee Harbor, 9 miles south of Arcadia Harbor, and 19 miles south of Frankfort Harbor. The distance to Chicago by water is about 185 miles. This harbor is the outlet to Portage Lake, which is about $3\frac{1}{2}$ miles long, from $\frac{1}{2}$ to $1\frac{1}{2}$ miles wide, and generally 20 to 40 feet deep in the central portions, but shoal along the shores, particularly at the east end. The natural outlet was at the northwest corner of the lake. In 1879, when work was begun by the Government, there was an artificial channel from Portage Lake to Lake Michigan about 400 feet long, 4 feet deep, and 130 feet wide between log and slab piers built by local enterprise. This channel is about a mile south of the original outlet. Along the north side of the east end of the lake is the village of Onekama with a population, in 1910, of 324.

3. *Maps.*—The locality is shown on the following maps of the Survey of the Northern and Northwestern Lakes (U. S. Lake Survey): General Chart of Lake Michigan, Catalogue No. 7; Coast Chart No. 7

(new) of Lake Michigan, Catalogue No. 77; and Portage Lake Harbor Catalogue No. 777. The details of the harbor entrance, with vicinity sketch, are shown on the accompanying map. A map of survey of September, 1878, showing the existing entrance and the proposed improvement, and a map showing Portage Lake and several adjacent townships, are printed in the annual report for 1879, page 1637. Maps showing progress in the construction of the harbor are shown in the annual reports of 1882 and 1884 at pages 2286 and 1974, respectively.

4. *Previous examinations.*—A report on a harbor of refuge was submitted under date of November 13, 1878, with an estimate of $189,860 for pier construction and dredging for a channel with a width of 300 feet and a minimum depth of 18 feet. This estimate provided for a north pier and revetment 1,750 feet long, and a south pier and revetment 2,000 feet long. (Annual Report for 1879, pp. 1635–1640.)

A special report on the harbor was submitted by the district engineer officer under date of May 6, 1912, in accordance with department instructions of March 15, 1912, in regard to revision of projects where changed conditions made it desirable. This report showed that in 1879 the coast line from Grand Haven to the Manitou Islands and Traverse Bay was without a suitable harbor of refuge for deep-draft grain-laden vessels, or for the numerous small sail vessels, and that Portage Lake was the most desirable location for such a harbor; that the country surrounding Portage Lake was the best agricultural district in the county; that the harbor was needed also for shipping forest products. Also that, due to small appropriations, as late as 1894 when $100,000 had been expended, most of the pier and revetment structures, begun in 1880, were in a condition of decay and a channel with a depth of only 5 to 7 feet could be maintained, with no local commerce to be served and no reason for the improvement at all unless for a harbor of refuge; that a revision of the project in 1899 increased the estimated cost from $189,860 to $344,300; that pier construction was completed in 1901, completing the project with the exception of the dredging; that the project depth for about half of the channel width was produced in 1904; that from 1906 to 1911 a channel 100 to 130 feet wide and 16 to 18 feet deep below mean lake level (1860–1875) was maintained by dredging between the piers, but that an entrance bar persisted in forming in Lake Michigan; that the commercial statistics showed a steadily decreasing traffic with a constantly improving channel; and that the reasons which were advanced in 1879 for a harbor of refuge no longer existed as the harbors at Frankfort, Manistee, and Ludington all had ample depths, the large freighters were better provided for elsewhere, and the sail vessels had disappeared. The report recommended that, on account of changed conditions since the adoption of the project, the improvement as a harbor of refuge be abandoned but that the entrance should be maintained by dredging and minor repairs made to the piers during the life of the present structures.

This report was concurred in by the division engineer. The Board of Engineers for Rivers and Harbors concurred in the recommendation to abandon the project as a harbor of refuge but went further and recommended the entire abandonment of the project. The Chief of Engineers concurred in this recommendation. (Annual Report for 1912, pp. 1049 and 2595–2601.)

5. *Work done by the United States.*—The project for this harbor, adopted by the river and harbor act approved March 3, 1879, provided for an entrance channel 300 feet wide and with a minimum depth of 18 feet. The following appropriations have been made:

March 3, 1879	$10,000.00	June 6, 1900	$85,000.00
June 14, 1880	10,000.00	June 13, 1902	59,000.00
March 3, 1881	10,000.00	March 2, 1907	10,000.00
August 2, 1882	25,000.00	June 25, 1910	13,000.00
July 5, 1884	12,500.00	July 25, 1912	3,000.00
August 5, 1886	15,000.00		
August 11, 1888	10,000.00	Total	395,500.00
September 19, 1890	8,000.00	Miscellaneous receipts	20.65
August 18, 1894	25,000.00		
June 3, 1896	25,000.00		395,520.65
March 3, 1899	75,000.00		

This total of $395,520.65 has been expended, $256,129.21 for new work and $139,391.44 for maintenance. The total length of the north pier and revetment, including a wing 114 feet long at the inner end, is 2,200 feet. The total length of the south pier and revetment, including a wing 17 feet long at the inner end, is 2,300 feet. The clear width between the piers at the entrance is 362 feet, narrowing to 356 feet inside. The increase of width, from 300 feet, is due to the utilization as foundations for the new piers of the old temporary jetties, built in 1879. (Annual Report for 1888, p. 1903.) At the present time there is an available depth below low water (2 feet below mean lake level 1860–1875), of about 16 feet between the piers and about the same depth on the north half of the entrance bar in Lake Michigan with a slightly less depth on the south half of the bar. With the exception of one day's dredging on the entrance bar in Lake Michigan in June, 1915, there has been no dredging done since November, 1912.

6. *Railroad facilities.*—A spur from the main line of the Manistee & Northeastern Railroad extends from Onekama Junction, which is 10 miles from Manistee, a distance of 3 miles to the village of Onekama.

7. *Commerce.*—The following commercial statistics are from the annual reports of the Chief of Engineers. Although efforts were made to obtain information as to the annual receipts and shipments by water the only data which could be obtained prior to the year 1907 were for the four years 1886, 1889, 1890, and 1898. The reason for this seems to have been that there was little to report.

Shipments by vessel, in tons of 2,000 pounds.

Calendar year.	Lumber.	Bark.	Wood and slabs.	Ties.	Brick.	Grain.	Potatoes.	Fish.	Fruit.	Total.
1886	10,560	8,000	7,500	350	.....	.....	.....	.....	.....	26,410
1889	16,625	5,200	6,000	.....	3,000	55	.....	.....	.....	30,880
1890	14,150	6,100	13,026	.....	2,500	.....	180	50	.....	36,006
1898	4,375	.....	800	.....	.....	523	1,800	.....	500	7,998

No receipts reported.

Receipts and shipments by vessel, in tons of 2,000 pounds.

Calendar year.	Receipts, miscellaneous merchandise.	Shipments.		Total.	Vessels.		Passengers arrived and departed.
		Miscellaneous merchandise.	Fruit.		Arrived and departed.	Net registered tonnage.	
1907	73	3,720	.....	3,793	360	109,080	.....
1908	907	2,534	.....	3,441	480	151,470	.....
1909	(1)	(1)	.....	2,173	456	145,688	(2)
1910	629	1,176	.....	1,805	768	558,756	7,000
1911	679	221	1,200	2,100	630	432,408	6,887
1912	928	648	650	2,226	718	595,628	7,027
1913	698	986	500	2,184	508	448,316	7,197
1914	857	826	750	2,433	562	487,386	5,762
Total	.....	.....	.....	20,155	.....	.....	33,873
Average	.....	.....	.....	2,519	.....	.....	6,775

[1] Receipts and shipments not separated.
[2] No record prior to 1910.

There is little in the above record of traffic to indicate any probable future increase. The adjacent country has been developing and the harbor has been available for a sufficient time to show some indication of an increase if it is likely to occur. This has been claimed to be a fine agricultural section and yet the tonnage of farm products is slight and the portion shipped by water is not increasing.

The large number of vessel arrivals and departures in the past eight years is due to the fact that two boat lines have been competing for the summer resort business. The Pere Marquette Line steamers operates a triweekly steamer between Ludington and Frankfort, stopping at Portage Lake during the summer months and, as traffic warrants, during the rest of the navigation season. The Northern Michigan Transportation Company operates a regular line of steamers between northern Michigan points and Chicago during the navigation season, including Portage Lake during the summer months. There are a number of summer resorts at various points around the lake, which accounts for the number of passengers arriving and departing, as shown in the above table for the years 1910–1914. A regular boat service is no doubt of great advantage to the resort business. The Northern Michigan Transportation Company manages and is developing one of the resorts.

8. *Conclusions and recommendations.*—It is evident that with the changed conditions as to shipping and the development of fine harbors at Ludington, Manistee, and Frankfort there is not at the present time any need of a harbor of refuge at Portage Lake, and it is even doubtful if it would be used if it were completed and maintained in accordance with the project.

The freight traffic is all local, is not increasing, and is too small to warrant any considerable expenditures for maintenance of a harbor. The money spent for dredging the last three years has been very small, but the project depths have not been maintained. From the dredging before 1912 it is estimated that annual dredging would cost about $3,000. With an annual tonnage of 2,500 tons and an annual passenger traffic of 6,775 the costs for maintenance dredging are $1.20 a ton if charged against the freight and if charged against the passenger traffic and freight become 32 cents for each ton of

freight and each passenger carried. This neglects repairs to the harbor structures, having a total length of 4,500 feet, which will need repairs in the coming years, nearly doubling the average annual expense for maintenance.

The interests most in need of a harbor seem to be the summer resort business. As shown above, the number of passengers arriving and departing by vessel has averaged 6,775 for the past five years, 1910–1914. Nearly all of these are carried during the summer vacation months, the two regular boat lines furnishing unusually good service for such a small resort. If the harbor were abandoned, the channel would gradually shoal until the present boats could no longer enter, but would still be available for lighter draft boats suitable for the short run from Manistee. While this would no doubt be a setback, such service, together with that of the railroad, would still provide for the continuance of the resort business. If this business were of enough importance to the local interests to cause them to cooperate in the cost, the channel could be maintained by the Government dredge, at the expense of the local interests, during the life of the present piers and revetments, but no such proposal has been made. It is recommended that the entire project be abandoned, because the harbor is no longer necessary as a harbor of refuge, as originally intended, nor is the local traffic sufficient to pay for its maintenance.

9. *Terminal and transfer facilities.*—The Northern Michigan Transportation Company and the Pere Marquette Line steamers each have somewhat temporary landing piers, with warehouses, at the village of Onekama, at the head of the lake. The facilities are all that are required to accommodate a little summer resort business, mostly for passengers. The spur from the Manistee & Northeastern Railroad ends at Onekama, but makes no connection with any water terminal. There is no public wharf. There are small landing piers at several summer resorts at various points around Portage Lake.

10. *Water power, etc.*—There are no questions of flood protection, water power, or other related subjects involved in this improvement.

F. W. ALTSTAETTER,
Major, Corps of Engineers.

[First indorsement.]

OFFICE DIVISION ENGINEER, LAKES DIVISION,
Buffalo, N. Y., November 17, 1915.

To the CHIEF OF ENGINEERS, UNITED STATES ARMY.

1. Forwarded.

2. The recommendation of the district officer in paragraph 8 of the preceding report that the entire project be abandoned, is concurred in, for the reasons stated in said report.

J. G. WARREN,
Colonel, Corps of Engineers,
Division Engineer.

[For report of the Board of Engineers for Rivers and Harbors, see p. 2].

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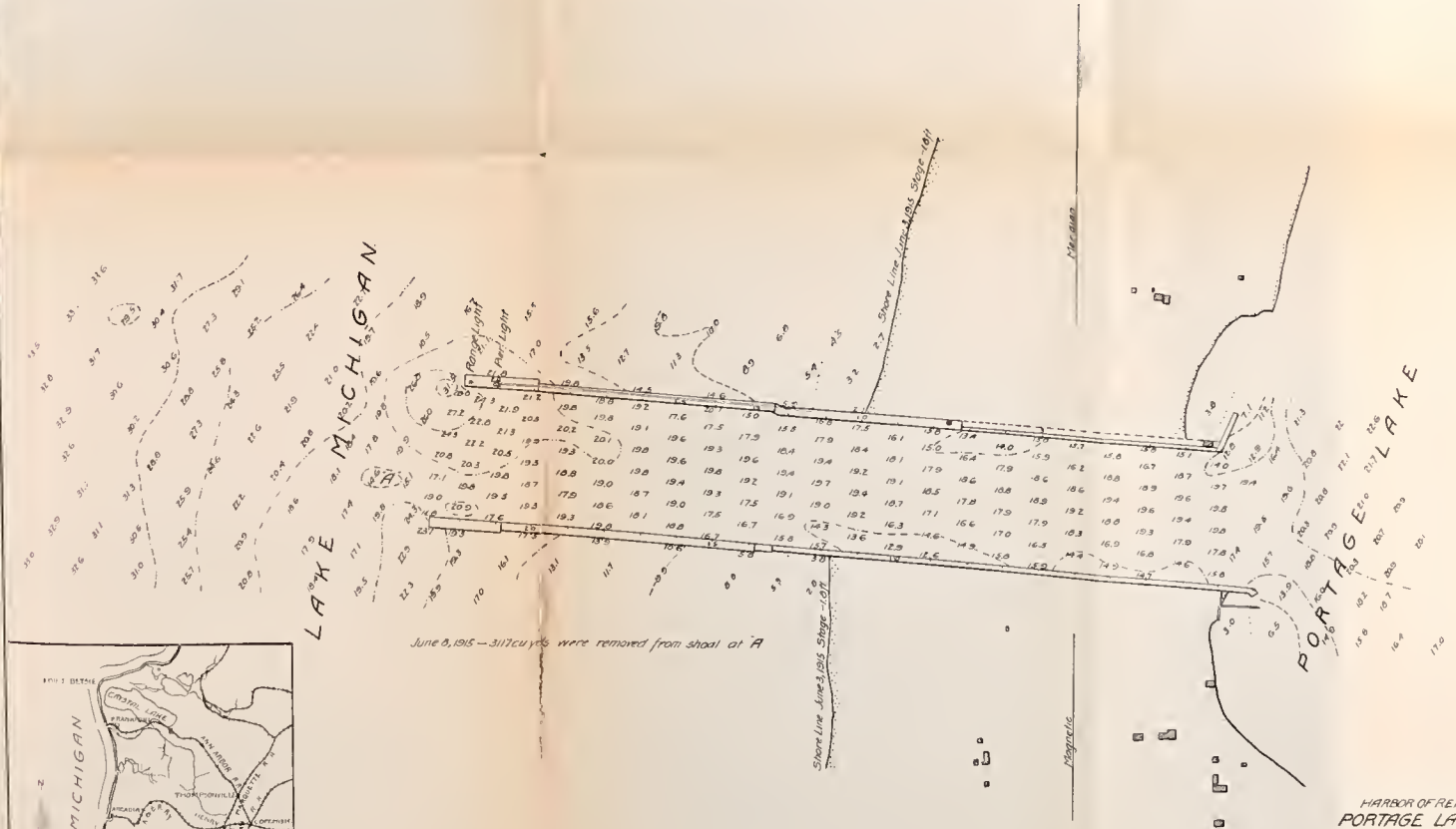
WAR DEPARTMENT.

CORPS OF ENGINEERS, U.S.A



HARBOR OF REFUGE AT
PORTAGE LAKE, MICH.
PREPARED BY THE DIRECTION OF
MAJOR F. W. ALTSTAETTER
CORPS OF ENGINEERS, U.S.A
—1915—

SOUNDINGS BY
A.T. BROOKINS, JR. ENG'R
JUNE 3, 1915
Scale of feet

The soundings are in feet and are reduced to Zero of Gage which is Mean Lake Level 1860-75, and 581.63 ft above mean tide at New York

Traced by F.B.B. and J.P.L.

U.S. Engineer Office,
Grand Rapids, Mich., Nov 15, 1915

Approved
J. W. Altstaetter
Major, Corps of Engineers, U.S.A

To accompany my report of this date to the Chief of Engineers.
See Cor file Ex 6

House Doc. No. 583 ; 64th Cong., 1st Sess.